



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/662,770

09/15/2003

Steven S. Williams

790063.00013

1485

26710

7590

10/31/2005

QUARLES & BRADY LLP  
411 E. WISCONSIN AVENUE  
SUITE 2040  
MILWAUKEE, WI 53202-4497

EXAMINER

HANSEN, COLBY M

ART UNIT

PAPER NUMBER

3682

DATE MAILED: 10/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/662,770

Applicant(s)

WILLIAMS, STEVEN S.

Examiner

Colby Hansen

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what the metes and bounds are of the sentence, "at least two axially spaced outer race surfaces defining a lubrication groove there between". Is the recitation intended to define the groove such that it is upon the outer race, or is it broad such that it refers to any groove axially between the surfaces.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 22 is rejected under 35 U.S.C. 102(b) as being anticipated by Peterson (US Pat. 1,973,994).

Peterson (US Pat. 1,973,994) discloses a shaft (applicant's recitation of a steering shaft is an intended use recitation, therefore the shaft/bearing assembly of Peterson (US Pat. 1,973,994) must merely be capable of use within a steering assembly, which it is) bearing assembly

Art Unit: 3682

comprising: an inner ring member 25 including a convex inner race surface having opposing axial edges; an outer ring member 15 encircling said inner ring member and defining a raceway space therebetween, said outer ring member including at least two axially spaced outer race surfaces defining a lubrication groove therebetween (as broadly recited, the outer rings contact area with 14b *defines* lubrication groove 14a between the outer race contact areas which will retain lubrication for eventual use); a flange 28a (fig. 3) axially outwardly spaced from each outer race surface extends radially inwardly past said outer race surfaces; a plurality of rollers 14 disposed in said raceway space between said flanges each of said rollers 14 including a concave radial race surface interposed between axially spaced radial race surfaces, each of said axially spaced radial race surfaces engaging one of said axially spaced outer race surfaces of said outer ring member and said concave radial race surface engaging said inner ring member convex inner surface.

Claim 22 is rejected under 35 U.S.C. 102(b) as being anticipated by Ai (US Pat. 6,354,745).

Ai (US Pat. 6,354,745) discloses a shaft (figs. 4-5)(applicant's recitation of a steering shaft is an intended use recitation, therefore the shaft/bearing assembly of Ai (US Pat. 6,354,745) must merely be capable of use within a steering assembly, which it is) bearing assembly comprising: an inner ring member 30 including a convex inner race surface having opposing axial edges; an outer ring member 32 encircling said inner ring member and defining a raceway space therebetween, said outer ring member including at least two axially spaced outer race surfaces defining a lubrication groove therebetween (as broadly recited, the outer rings contact

Art Unit: 3682

area with the bearing of figure 6 *defines* a lubrication groove between the outer race and bearing and between the outer race contact areas which will function as a lubrication reservoir col. 1/ line 64 to col. 2/line 2); a plurality of rollers 34 disposed in said raceway space between said flanges each of said rollers 34 including a concave radial race surface 42 interposed between axially spaced radial race surfaces, each of said axially spaced radial race surfaces engaging one of said axially spaced outer race surfaces of said outer ring member and said concave radial race surface engaging said inner ring member convex inner surface.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peterson (US Pat. 1,973,994) in view of Diedrich (US Pat. 5,080,502).

Peterson (US Pat. 1,973,994) discloses a shaft (applicant's recitation of a steering shaft is an intended use recitation, therefore the shaft/bearing assembly of Peterson (US Pat. 1,973,994) must merely be capable of use within a steering assembly, which it is) bearing assembly comprising: an inner ring member 25 including a convex inner race surface having opposing axial edges; an outer ring member 15 encircling said inner ring member and defining a raceway

Art Unit: 3682

space therebetween, said outer ring member including at least two axially spaced outer race surfaces defining a lubrication groove therebetween (as broadly recited, the outer rings contact area with 14b *defines* lubrication groove 14a between the outer race contact areas which will retain lubrication for eventual use); a flange 28a (fig. 3) axially outwardly spaced from each outer race surface extends radially inwardly past said outer race surfaces; a plurality of rollers 14 disposed in said raceway space between said flanges each of said rollers 14 including a concave radial race surface interposed between axially spaced radial race surfaces, each of said axially spaced radial race surfaces engaging one of said axially spaced outer race surfaces of said outer ring member and said concave radial race surface engaging said inner ring member convex inner surface.

However Peterson (US Pat. 1,973,994) does not disclose a collar fixed to each end of said inner bearing for “unitizing” the seal/shaft/bearing assembly.

Diedrich (US Pat. 5,080,502) teaches a radial rolling bearing comprising an inner ring, an outer ring, radial rolling bearings, flanges axially outwardly spaced from each outer race surface extending radially inwardly past said outer race surfaces, a seal spaced axially outwardly from each axial end of said rollers and disposed between said inner and outer ring members to seal said rollers between said inner and outer ring members a collar fixed to each axial end of said inner ring member to unitize said bearing assembly; said flanges including radially inwardly opening groove and said collars including a circumferential groove opening toward said radially inwardly opening groove of said flanges, and said seal including an outer radial edge engaging said radially inwardly opening groove of said flanges and an inner radial edge engaging said

Art Unit: 3682

circumferential groove for the purpose of having an economic, easily manufactured bearing sealing assembly (col. 1/lines 30-36).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the sealing assembly as taught by Diedrich (US Pat. 5,080,502) within Peterson (US Pat. 1,973,994) so as have an economic, easily manufactured bearing sealing assembly, as suggested by Diedrich (US Pat. 5,080,502) (col. 1/lines 30-36).

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ai (US Pat. 6,354,745) in view of Diedrich (US Pat. 5,080,502).

Ai (US Pat. 6,354,745) discloses a shaft (figs. 4-5)(applicant's recitation of a steering shaft is an intended use recitation, therefore the shaft/bearing assembly of Ai (US Pat. 6,354,745) must merely be capable of use within a steering assembly, which it is) bearing assembly comprising: an inner ring member 30 including a convex inner race surface having opposing axial edges; an outer ring member 32 encircling said inner ring member and defining a raceway space therebetween, said outer ring member including at least two axially spaced outer race surfaces defining a lubrication groove therebetween (as broadly recited, the outer rings contact area with the bearing of figure 6 *defines* a lubrication groove between the outer race and bearing and between the outer race contact areas which will function as a lubrication reservoir col. 1/ line 64 to col. 2/line 2); a plurality of rollers 34 disposed in said raceway space between said flanges each of said rollers 34 including a concave radial race surface 42 interposed between axially spaced radial race surfaces, each of said axially spaced radial race surfaces

Art Unit: 3682

engaging one of said axially spaced outer race surfaces of said outer ring member and said concave radial race surface engaging said inner ring member convex inner surface.

However Ai (US Pat. 6,354,745) does not disclose a collar fixed to each end of said inner bearing for “unitizing” a seal/shaft/bearing assembly.

Diedrich (US Pat. 5,080,502) teaches a radial rolling bearing comprising an inner ring, an outer ring, radial rolling bearings, flanges axially outwardly spaced from each outer race surface extending radially inwardly past said outer race surfaces, a seal spaced axially outwardly from each axial end of said rollers and disposed between said inner and outer ring members to seal said rollers between said inner and outer ring members a collar fixed to each axial end of said inner ring member to unitize said bearing assembly; said flanges including radially inwardly opening groove and said collars including a circumferential groove opening toward said radially inwardly opening groove of said flanges, and said seal including an outer radial edge engaging said radially inwardly opening groove of said flanges and an inner radial edge engaging said circumferential groove for the purpose of having an economic, easily manufactured bearing sealing assembly (col. 1/lines 30-36).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the sealing assembly as taught by Diedrich (US Pat. 5,080,502) within Ai (US Pat. 6,354,745) so as have an economic, easily manufactured bearing sealing assembly, as suggested by Diedrich (US Pat. 5,080,502).

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Peterson (US Pat. 1,973,994) in view of Acampora, Jr. (US Pat. 5,839,834).



Peterson (US Pat. 1,973,994) discloses the claimed invention except for explicit disclosure of a lubricant groove, *on the outer race*, defined by at least two axially spaced outer race surfaces.

Acampora, Jr. (US Pat. 5,839,834) teaches an outer rotary bearing with an annular groove for the purpose of increasing lubrication capacity about the bearings as well as to provide a reservoir of lubrication of the assembly (claim 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the groove upon the non-bearing contact area as taught by Acampora Jr. within Peterson so as to increase the lubrication capacity about the bearings as well as to provide a reservoir of lubrication for the assembly, as suggested by Acampora, Jr. (US Pat. 5,839,834) in claim 1.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ai (US Pat. 6,354,745) in view of Acampora, Jr. (US Pat. 5,839,834).

Ai (US Pat. 6,354,745) discloses the claimed invention except for explicit disclosure of a lubricant groove, *on the outer race*, defined by at least two axially spaced outer race surfaces.

Acampora, Jr. (US Pat. 5,839,834) teaches an outer rotary bearing with an annular groove for the purpose of increasing lubrication capacity about the bearings as well as to provide a reservoir of lubrication of the assembly (claim 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the groove upon the non-bearing contact area as taught by Acampora, Jr. (US Pat. 5,839,834) within Ai so as to increase the lubrication capacity about the

Art Unit: 3682

bearings as well as to provide a reservoir of lubrication for the assembly; as suggested by Acampora, Jr. (US Pat. 5,839,834) in claim 1.

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peterson (US Pat. 1,973,994) in view of Acampora, Jr. (US Pat. 5,839,834), as applied to claim 22, further in view of Diedrich (US Pat. 5,080,502).

Peterson (US Pat. 1,973,994) discloses a shaft (applicant's recitation of a steering shaft is an intended use recitation, therefore the shaft/bearing assembly of Peterson (US Pat. 1,973,994) must merely be capable of use within a steering assembly, which it is) bearing assembly comprising: an inner ring member 25 including a convex inner race surface having opposing axial edges; an outer ring member 15 encircling said inner ring member and defining a raceway space therebetween, said outer ring member including at least two axially spaced outer race surfaces defining a lubrication groove therebetween (as broadly recited, the outer rings contact area with 14b *defines* lubrication groove 14a between the outer race contact areas which will retain lubrication for eventual use); a flange 28a (fig. 3) axially outwardly spaced from each outer race surface extends radially inwardly past said outer race surfaces; a plurality of rollers 14 disposed in said raceway space between said flanges each of said rollers 14 including a concave radial race surface interposed between axially spaced radial race surfaces, each of said axially spaced radial race surfaces engaging one of said axially spaced outer race surfaces of said outer ring member and said concave radial race surface engaging said inner ring member convex inner surface.

However Peterson (US Pat. 1,973,994) does not disclose a collar fixed to each end of said inner bearing for “unitizing” the seal/shaft/bearing assembly.

Diedrich (US Pat. 5,080,502) teaches a radial rolling bearing comprising an inner ring, an outer ring, radial rolling bearings, flanges axially outwardly spaced from each outer race surface extending radially inwardly past said outer race surfaces, a seal spaced axially outwardly from each axial end of said rollers and disposed between said inner and outer ring members to seal said rollers between said inner and outer ring members a collar fixed to each axial end of said inner ring member to unitize said bearing assembly; said flanges including radially inwardly opening groove and said collars including a circumferential groove opening toward said radially inwardly opening groove of said flanges, and said seal including an outer radial edge engaging said radially inwardly opening groove of said flanges and an inner radial edge engaging said circumferential groove for the purpose of having an economic, easily manufactured bearing sealing assembly (col. 1/lines 30-36).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the sealing assembly as taught by Diedrich (US Pat. 5,080,502) within Peterson (US Pat. 1,973,994) so as have an economic, easily manufactured bearing sealing assembly, as suggested by Diedrich (US Pat. 5,080,502).

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ai (US Pat. 6,354,745) in view of Acampora, Jr. (US Pat. 5,839,834), as applied to claim 22, further in view of Diedrich (US Pat. 5,080,502).

Art Unit: 3682

Ai (US Pat. 6,354,745) discloses a shaft (applicant's recitation of a steering shaft is an intended use recitation, therefore the shaft/bearing assembly of Ai (US Pat. 6,354,745)) must merely be capable of use within a steering assembly, which it is) bearing assembly comprising: an inner ring member 25 including a convex inner race surface having opposing axial edges; an outer ring member 15 encircling said inner ring member and defining a raceway space therebetween, said outer ring member including at least two axially spaced outer race surfaces defining a lubrication groove therebetween (as broadly recited, the outer rings contact area with 14b *defines* lubrication groove 14a between the outer race contact areas which will retain lubrication for eventual use); a flange 28a (fig. 3) axially outwardly spaced from each outer race surface extends radially inwardly past said outer race surfaces; a plurality of rollers 14 disposed in said raceway space between said flanges each of said rollers 14 including a concave radial race surface interposed between axially spaced radial race surfaces, each of said axially spaced radial race surfaces engaging one of said axially spaced outer race surfaces of said outer ring member and said concave radial race surface engaging said inner ring member convex inner surface.

However Ai (US Pat. 6,354,745) does not disclose a collar fixed to each end of said inner bearing for "unitizing" the seal/shaft/bearing assembly.

Diedrich (US Pat. 5,080,502) teaches a radial rolling bearing comprising an inner ring, an outer ring, radial rolling bearings, flanges axially outwardly spaced from each outer race surface extending radially inwardly past said outer race surfaces, a seal spaced axially outwardly from each axial end of said rollers and disposed between said inner and outer ring members to seal said rollers between said inner and outer ring members a collar fixed to each axial end of said

Art Unit: 3682

inner ring member to unitize said bearing assembly; said flanges including radially inwardly opening groove and said collars including a circumferential groove opening toward said radially inwardly opening groove of said flanges, and said seal including an outer radial edge engaging said radially inwardly opening groove of said flanges and an inner radial edge engaging said circumferential groove for the purpose of having an economic, easily manufactured bearing sealing assembly (col. 1/lines 30-36).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the sealing assembly as taught by Diedrich (US Pat. 5,080,502) within Ai (US Pat. 6,354,745) so as have an economic, easily manufactured bearing sealing assembly, as suggested by Diedrich (US Pat. 5,080,502).

### *Response to Arguments*

Applicant's arguments, filed 8/8/2005, with respect to the 35 USC 112, 2<sup>nd</sup> paragraph rejections have been fully considered and are persuasive. The 35 USC 112, 2<sup>nd</sup> paragraph rejections of claims 5, 6, 9, 16, 17, and 19 have been withdrawn.

Applicant argues that Peterson in view of Diedrich fails to disclose "at least two axially spaced outer race surface defining a lubrication groove therebetween". Examiner is unclear as to the scope of such a recitation, which therefor required the above 35 USC 112, 2<sup>nd</sup> rejection. Furthermore, Examiner has included a redundant prior art rejection utilizing the outer race lubricant groove of Acampora, Jr. (US Pat. 5,839,834) in addition to the explained interpretations of the "defined grooves) of Ai (US Pat. 6,354,745) and Peterson (US Pat. 1,973,994).

***FACSIMILE TRANSMISSION***

Submission of your response by facsimile transmission is encouraged. Group 3600's facsimile number is **(571) 273-8300**. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as the PTO's mail room processing and delivery time. For a complete list of correspondence not permitted by facsimile transmission, see MEP. 502.01. In general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check **should not be** submitting by facsimile transmission separately from the check.

Responses submitted by facsimile transmission should include a Certificate of Transmission (MEP. 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. (703) 872-9306) on \_\_\_\_\_

(Date)

Typed or printed name of person signing this certificate:

\_\_\_\_\_

---

(Signature)

If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and MEP. 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

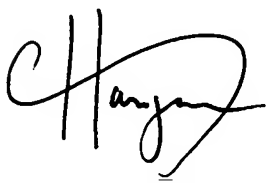
*Conclusion*


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colby Hansen whose telephone number is (571) 272-7105. The examiner can normally be reached on Monday through Thursday and every other Friday from 7:30 PM to 5:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley, can be reached on (571) 272-6917. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2168.

Colby M. Hansen

Patent Examiner

 10/26/05

  
RICHARD W. RIDLEY  
PRIMARY EXAMINER  
RICHARD W. RIDLEY  
PRIMARY EXAMINER  
SPE Au 3682